

# FACTORIZING PRACTICE

- Trinomials (3 terms) with  $a=1$  ( $x^2+bx+c$ )

- What 2 numbers multiply to make  $c$  and add to make  $b$ ?

1) $b^2 + 8b + 7$	2) $x^2 + 16x + 64$	3) $n^2 + 6n + 8$
4) $n^2 + 4n - 12$	5) $x^2 - 11x + 10$	6) $a^2 + 11a + 18$
7) $x^2 - 4x + 24$	8) $p^2 + p - 90$	9) $b^2 - 6b + 8$
10) $n^2 - 5n + 6$	11) $6v^2 + 66v + 60$	12) $2k^2 + 22k + 60$

pull out GCF first, then factor  
what's left inside the parentheses

Name \_\_\_\_\_ Date \_\_\_\_\_ Block \_\_\_\_\_

• **Difference of squares (2 terms) ( $a^2 - b^2$ )**

- Always factors to  $(a+b)(a-b)$

1) $p^2 - 36$	2) $x^2 - 1$	3) $144 - y^2$
4) $9x^2 - 1$	5) $16x^2 - 9$	6) $n^2 - 121$
7) $4c^2 - 121$	8) $9a^2 - 100$	9) $36x^2 - 1$
10) $4n^2 - 49$	11) $3n^2 - 75$	12) $2x^2 - 8$

Factor out GCF first, then factor  
what's left inside

Name \_\_\_\_\_ Date \_\_\_\_\_ Block \_\_\_\_\_

• **Factoring by grouping (4 terms)**

- Cut problem in half (2 terms in each half)
- Factor each half using GCF
- Make sure that what's in parentheses matches
- Group the factors together

1) $4v^3 - 12v^2 - 5v + 15$	2) $8r^3 - 64r^2 + r - 8$	3) $12p^3 - 21p^2 + 28p - 49$
4) $x^2a + x^2b - 16a - 16b$	5) $12x^3 + 2x^2 - 30x - 5$	6) $y^3 + 3y^2 - 9y - 27$
7) $t^3 - t^2 + t - 1$	8) $ay^2 + 4y^2 - 9a - 36$	9) $16mn - 4m^2 + 28n - 74$
10) $4x^3 + 12x^2 - 9x - 27$	11) $6x^2 - 24x + 2xy - 8y$	12) $105n^3 + 175n^2 - 75n - 125$

Pull out GCF first, then factor what's left inside

## • Mixed Practice!

1) $n^2 - 10n + 9$	2) $g^2 - 196$	3) $x^2 - x - 56$
4) $2x^2 - 8 - x^3 + 4x$	5) $t^2 + 100$	6) $m^2 + 2m - 24$
7) $25v^3 + 5v^2 + 30v + 6$	8) $x^2 + 5x + 3$	9) $6v^3 - 16v^2 + 21v - 56$
10) $p^2 - 15p + 50$	11) $36a^4 - 25b^4$	12) $2r^2 + 2r - 4$